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JOINT DRAINAGE WITH RESTORATION OF FUNCTION.

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Suppurative Arthritis up to and including the first part of the year 1917 presented one of the most difficult and discouraging problems of surgery. The mortality of the severe cases of infection was high, and even in the more favorable cases re-establishment of function was often prevented by partial or complete ankylosis.

This was due to the fact that the anatomical construction of most joints rendered their irrigation very uncertain, and the use of tubes produced necrosis and did not drain. Taking the knee joint as an example, it being the joint which sustains 62% of all joint wounds and one of the most resistant to treatment, infection spreads backward sooner or later and as Tuffier has demonstrated no amount of irrigation of the anterior cavity will affect suppuration of the posterior pouches. The dislocation method, while a life-saving measure, resulted in more or less painful ankylosis and was a terrible experience for both the patient and the surgeon.

The changes that have ensued in the principles of treatment since 1917 have been so striking that to accept them means the complete upsetting of our ideas on the subject. Some of the procedures are so radical that they are actually astounding. Having in view the early and complete re-establishment of function, Willems of Hoojstade, Belgium, urged that post-operative immobilization of infected joints should not be employed and demonstrated the correctness of his claim by a series of brilliant results. In doing this he completely revolutionized the treatment of joint injuries and gave to the profession the present method of functional drainage. I realize that the method of Willems will only be generally accepted by demonstrating its superiority over all forms of conservative measures, so I am going to ask you to bear with me that I may quote a few statistics.

Willems, in an early paper written during the war, gives the figures in regard to the final outcome of this treatment on 100 consecutive cases of knee joint infections. Of these 100, eighteen were of a violent purulent type, chiefly streptococcic. In the 100 cases there were no deaths and no amputations—there was one resection and two stiff joints resulted. Taking his figures as correct, and the experience of others have amply proven that they undoubtedly are, we see that in 100 cases of knee joint infection he has given 97 patients useful, movable knee joints. Just as a comparison, in one of the U. S. evacuation hospitals early in the war, out of 82 patients with knee joint injuries, 16 remained infected at the time the report was made, 9 died, 3 had amputations, 7 suffered complete ankylosis and one resection was made. In analyzing this series of cases, in order to find the marked difference in the results obtained, the ill results are ascribed to half-hearted attempts at mobilization and the fact that due to early evacuation the parts were immobilized for transportation.

My own experience has been confined to five cases of purulent arthritis, which I have treated from the beginning to their completion. Two were of the knee joint. Two of the elbow and one of the ankle. While this comparatively is a small number, it is sufficient for the purpose of analyzing the results obtained.

In the treatment of these cases the method of Willems was followed in minute detail. Quoting from Willems' writings on the subject and using the knee joint as illustrative, it is as follows: Unilateral or bilateral arthrotomy is indispensable. The joint must be widely opened. The patella is raised and the joint cavity washed out, preferably with ether. Hemorrhage is controlled and the wounds covered with aseptic dressings. No immobilizing appliance is applied and under no condition is any drainage material placed in the joint.

*Read in Section of Surgery, May, 1922.

Mobilization is begun immediately, the first flexion and extension being made before the patient has entirely recovered from his ether. From then on active motion is repeated at least every two hours during the day and several times during the course of the night. As soon as possible, usually the second day, the patient is gotten out of bed at the two hour intervals and every means used to encourage him to use the limb.

My cases of knee joint infection were ideal for treatment by this method. The first case, a purulent stalphlococcic arthritis was first seen five days after a puncture wound of the knee joint produced by the prong of a pitchfork, while the man was at work in a stable. When seen his temperature was 102, the leg was spasmodically fixed and swelling of the joint was severe. Frank pus was removed by aspiration. The joint cavity was washed out with the normal saline through a large size troachar. Twenty-four hours after this procedure, the symptoms had become intensified and bilateral arthrotomy was performed, the Willems technique being religiously followed. On the second day the man was out of bed for a few steps every two hours and on the seventh day had progressed to where he was pushing a wheelchair patient up and down the ward. Six weeks from the time of operation the patient was discharged from the hospital, the soft tissue wounds having been barreled and a closure made, with a painless functionating joint.

The second case was the result of an injury sustained by having the knee lacerated beneath an overturned motor truck. There was no fracture demonstrated. There was a large penetrating wound on the internal lateral surface of the joint. This man had been given first aid treatment which had consisted of sewing up the contused and lacerated skin. He came under my care the second day after his injury. He was crying out with pain, his leg rigidly fixed, temperature 101 and pulse 130. Bilateral arthrotomy was performed at once. The contused and lacerated soft tissue was cut away and the incision extended along the border of the quadroceps allowing free access to the joint cavity which was filled with blood. This was washed out with saline followed by ether and the patient returned to bed to begin the Willems routine. Immediate joint closure being deemed unwise on account of the extent of the injury and the severity of the reaction which had been presented by the patient. Secondary suture of the superficial tissues of this knee was not a sucess, as the defects of tissue were so great that satisfactory closure could not be made. The knee was healed in three months with rather extensive scarring but with perfect function as the accompanying illustration will show. It may be of interest to remark that this patient was able to play as forward upon the State University Basketball team this past season.

Views taken 11 months after injury. Complete return of function has been obtained.

As a result of the treatment of these men I was deeply impressed with the following, —that frequent mobilizations were necessary—that when the interval was lengthened to many hours, that increased pain and a temperature reaction promptly followed. This, in one of my cases, occurred on account of the tender sympathy of a kind-hearted nurse who allowed the patient to rest throughout most of one night. That the mobilization must be active not passive. When the patient has been instructed in how to use the limb and properly impressed as to the ultimate object to be attained, that he will flex and extend the limb with surprisingly little pain. Passive motion will be found very painful. When walking is first attempted, the patient will probably faint, and will believe and insist that it can't bedone,—as a matter of fact it can and must be done. By the use of sufficient perseverance on the part of the surgeon he will soon find that he can hobble around the bed, provided of course, the temperature is under control and there be no major fracture present.

In attempting to discuss the treatment of other joints by this method it should be borne in mind that the knee and the elbow are the ideal ones for treatment. The drainage being proportionate to the range of movements in the joint, it can be seen that the wrist and ankle are not adapted to this method. The ankle infection treated by me was a total failure, as far as restoration of function was concerned. It was undertaken in 1918, before Willems published his first article in English. The operation was made for the cure of a severe arthritis, which was secondary to an Hemolytic Streptococci Mastoiditis. It was no doubt ill advised. I found I could not get adequate exposure of the joint and did not get sufficient drainage from the range of motion to produce a secession of pain sufficient to allow me to induce the patient to continue his efforts.

The infections of the elbow joint, one a low grade staphlococcic infection following an attack of influenza, yielded to a unilateral external arthrotomy, the incision made was four inches in length over the external condyle of the humerus; the other was a mixed infection with sinus formation which had existed for some months and had no doubt started as an osteomyelitis. The elbow joint was thoroughly cleaned of all debris and with the large free opening it was surprising to see with what little pain the patient began its immediate use. Healing was complete in sixty days and while the range of motion is somewhat limited, he has no pain.

It is my belief that while the method of Willems was a product of the war and intended primarily for the treatment of suppurative arthritis following wounds of joints, that he has given us a surgical principle which may be adapted to any form of infective arthritis,—particularly of the knee or elbow, with results that not infrequently will be perfect.

Discussion: F. L. CARSON, M. D., Shawnee, Oklahoma.

During the last five years almost revolutionary changes have been made in the treatment of suppurative arthritis. The admonition of Matas relative to joint infection, "rest, absolute, physiological and anatomical rest," and Murphy in 1912 who stated "when we have an infection of synovial membrane, if we would maintain a separation of the inflamed surface, if we would avoid synechiae, we must keep these surfaces apart by reducing the virulence of the infection at the earliest possible moment, by relieving the pressure of the products of infection and by keeping the surface away from the external air. This is a law. "If you expose any serous surface to the air for any considerable length of time the endothetial lining is always destroyed and ankylosis results. It is a far cry from these two eminent authorities, to the advice published by Willems in 1917 and so ably discussed by the present essayist.

In his first American article on the subject (Surg. Gyn. & Obs., May, 1919, page 546), Willems advised against any irrigation of the joint after arthrotomy.

My experience has been limited to four cases, all knee joint infection. Like the essayist I was struck with the brilliant termination of Willems published cases and remembering the terrible results of the old Peck and other methods of treatment, was induced with fear and trembling to adopt the new procedure.

The final outcome in my few cases has been good. In no instance has there been full restoration of function but neither has there been ankylosis. The range of motion has been from twenty-five to ninety degrees. The greatest difficulty has been in securing the proper co-operation of the patient and nurses, for I am free to say that all my patients have complained of pain on active motion. On the whole I believe the procedure has been a distinct improvement and possibly as we come to more fully understand the underlying principle our results will be better.

Discussion: C. C. HOKE, M. D., Tulsa, Okla.

I have enjoyed Dr. Lynch's paper very much and feel that he should be congratulated upon the results he has obtained in the treatment of septic arthritis cases by the Willems method.

In the treatment of purulent arthritis our aim must be not only to cure the infection but also to give the patient the best possible functional results.

These cases are always serious and difficult to treat. Even if we succeed in clearing up the septic process the patient is likely to have more or less disability as a result of ankylosis. Drainage material introduced into the joint will not completely drain all portions of the joint cavity and will increase the danger of ankylosis.

There can no longer be any doubt that in selected cases of purulent arthritis, especially where there are no gross extra articular lesions of bone or soft parts, the Wil-

lems method of treatment is superior to any other method at our command, both as to the rapidity of healing of the diseased joint tissues and the degree of joint function obtained.

Obviously the method is more applicable to certain joints, especially the knee and elbow, where the range of motion is extensive. But just as maximum results in the treatment of septic wounds by the Carrel-Dakin method can be obtained only by rigid adherence to detail, so with the Willems method of treating suppurative arthritis the results will be disappointing unless all details of the method are strictly adhered to.

I would emphasize the following points: Free drainage by means of extensive arthrotomy wounds.

2. Through primary cleansing of the joint with removal of any loose fragments of tissue or foreign bodies and the control of hemorrhage.

3. Mobilization—early, active and frequent with a gradual increase in the range of motion.

4. This method is not applicable in the treatment of tuberculosis arthritis or in the early stages of acute septic arthritis before suppuration has taken place.

CHLOLECYSTECTOMY WITHOUT DRAINAGE.

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Mangum, Oklahoma.

Before going into detail and setting forth the advantages attained by the operative technique indicated by the title of this paper, it might be well to mention some of the many conditions for which removal of the gall-bladder is the proper procedure in affording the most permanent relief.

There is no field of surgery in which greater progress has been accomplished within the last decade with such correspondingly gratifying results as in operations upon the gall-bladder and biliary ducts.

The pathology of the biliary apparatus demanding surgical interference ranges all the way from simple catarrhal chlolecystitis through the varying degrees of more pronounced infection, stones, ciatricial stenosis, etc., to malignancy.

As a more rational understanding of the far-reaching effects of these conditions became more universal among surgeons, the operative technique became improved and the end results became better. The gradual progressive steps in gall-bladder surgery have been personally observed by every surgeon of more than ten years experience. This does not mean to imply that any of the later operations were not done years ago, but that they have only in recent years been accepted and performed generally. There are many good surgeons operating today who tenaciously limit their treatment of the gall-bladder in practically all cases, to simple drainage. But, in justice to them, I wish to state that it is not because they do not have the dexterity to perform the more difficult chlolecystectomy, but due to an honest conviction that the older method is more proper. Then, we have a greater majority of modern surgeons performing chlolecystectomy, but still resorting to drainage of the gall-bladder area through the abdominal wall. We also have a small, but ever increasing percent of surgeons who are doing chlolecystectomies and closing the abdomen without drainage, obtaining splendid results with a minimum amount of post-operative discomfort.

It is not so many years since we drained for nearly every abdominal operation. Following hysterectomies, salpingectomies, appendectomies without actual pus formation, removal of mestenteric cysts, etc., with the consequent dreaded adhesions that used to be such a real source of worry to the surgeon and a bogey to the prospective patient. Even to this day we have patients using the adhesion argument in giving excuses against the removal of a simple catarrhal appendix. But we eventually abandoned draining for anything less than an abscess or an active peritonitis, with a resultant increase in post operative comfort to the patient, and a more quick convalescence and a greater personal satisfaction in our abdominal work. All these progressive successes without drainage, in the lower abdomen, have gradually stimulated the surgeon to more daring steps to eliminate drainage entirely from abdominal surgery, except of course when an active suppurating condition is existing in the peritoneal cavity. Thus, recently a great number of surgeons of unquestionable ability have adopted as a routine chlolecystectomies without drainage. Personally, I have not come to the point where I have adopted it as a routine procedure, but my percentage is gradually rising as I am becoming more familiar with the comparative results.

My attention was first attracted to this technique during the great war, and I employed it first in the spring of 1919 while serving as Chief Surgeon of a British Base Hospital. Since returning to America and observing the reported results of such men as A. Murat Willis of Richmond, and H. M. Richter of Chicago, I have more frequently used this technique, without, however, establishing it as a routine practice. But the results have been so uniformly good that we have employed it in twenty-three select cases within the past year with such gratifying results that I have become enthusiastically in favor of a more general adoption of the technique. Of course, my own series of cases is too small to set up as criteria. But my observations of this limited number of cases corresponds so favorably with the reported results of surgeons who have had a large number of such operations that I feel my work is worth reporting.

The outstanding advantages of chlolecystectomy without drainage, as has been observed and noted by me, are, a smooth post-operative condition of patient, a minimum amount of gastric and abdominal distress, a slow and more regular pulse, less nausea, a minimum amount of adhesions, non-irritation of skin by bile, a primary healing of the incision wound, no soiled dressings and a pleasant, smiling and grateful patient.

Recently, in advocating before a Medical Society, chlolecystectomy without drainage, the objection was raised that there was danger of the ligature on cystic stump slipping with a resultant spilling of bile in the peritoneal cavity. There is no more danger of cystic duct ligature slipping than a ligature on an ovarian, uterine, or other artery and probably the danger is decidedly less, due to the fact that the blood pressure in an artery the size of the cystic duct is far greater than the bile pressure in said duct.

Then, again, as we all know, drains set down anywhere on a suture or a ligature has a tendency to produce fistula. This very thing alone often accounting for the displacement of the ligature and the subsequent flowing of bile through wound that we so often see following chlolecystectomy with drainage. Therefore, your duct without drainage is not so liable to leak as it is with drainage.

Then again, if we accept the theory that removal of the gall-bladder results in a compensatory dilation of the common duct it is perfectly obvious that the sooner the bile ceases to regurgitate through cystic stump the sooner this compensatory dilation takes place, with a return of biliary function approaching normalcy through a substituted condition. And this compensation, as we all have observed, is often delayed by a patentency of cystic stump developing following the placing of drainage. It may be that I am too enthusiastic about the results of this especial technique, but I am thoroughly convinced that as far as its effect upon the post-operative comfort and early convalescence of patient is concerned, it marks the greatest advancement that has been made in gall-bladder surgery in recent years.

LOCAL ANAESTHESIA IN GENERAL SURGERY.

W. P. FITE, A. B., M. D.,
Muskogee, Okla.

Since the beginning of medicine, the search has constantly been for a local anaesthetic with such properties as to be useful surgically. Not until Bennet in 1874 first demonstrated the anaesthetic properties of cocaine was any appreciable advance made.

The first advance in its actual use as an anaesthetic was in its surface application to the eye, nose, throat and larynx. Gradually its uses extended to the realm of surgery, through the use of the hypodermic syringe invented by F. Rynd of Edinburgh in 1845. But, because of its toxicity, its popularity in surgery was impeded until the discovery of adrenlin within the last few years.

Einhorn, in 1905, introduced the synthetic anaesthetic novocain, very similar in its anaesthetic action to cocain, but from five to seven times less toxic, and capable of being boiled without injuring its strength. In the past decade, the combination of this agent with adrenalin has become the local anaesthetic of choice practically the world over, and has opened up almost the whole of the realm of surgery to the possibilities of local anaesthesia.

Adrenalin gave a great impetus to the use of local anaesthesia by providing the action of constricting the vessels in the field of the injection, thereby greatly retarding the absorption of the drug. This action both prolonged the action of the drug and greatly increased the size of the dose that could be given with safety.

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The anaesthetic solution is administered through hypodermic needles of various sizes and lengths. Wherever the skin is to be punctured, a small intra-dermal wheal is made with a fine needle. This produces an anaesthetic area of skin through which longer needles of larger size (the writer uses size 22 from 3 cm. to 9 cm. in length) may be painlessly introduced. The ordinary 10 CC Luer syringe or some of the self-filling apparatuses now on the market may be used.

It is always best to anaesthetize the deepest layer first, because there lie the larger nerve-trunks, and, as considerable fluid is often injected into an area, the thickness of the tissues is increased. This, if it occurs in the outer layers first, makes it more difficult to localize the needle point in the deeper layers.

The operator accustomed to local anaesthetic methods can tell quite accurately the location of the point of his needle in the tissues. During the injection, the needle should always be moving, and care must be taken not to inject the solution into a blood vessel. When injecting with the needle stationary, the needle should be disconnected or else the plunger of the syringe pulled back in order to observe whether blood will flow.

The solutions used by the writer are those advocated by Victor Pauchet.

The formulas are as follows:

(1) 25 drops of 1/1000 adrenalin solution to 200 mils of ½ per cent novocain solution.

(2) 25 drops of adrenalin to 100 mils of 1. per cent novocain.

(3) 25 drops of adrenalin to 50 mils of 2 per cent novocain.

(4) 25 drops of adrenalin solution to 25 mils of 4 per cent novocain.

The writer often uses the combined novocain and synthetic adrenalin tablets which, in his hands, are just as effective and more convenient.

There is no hesitancy in using up to 200 or 250 CC. of the ½-strength solution where called for. However, it must be noted that the more concentrated the solution the more care must be exercised in its use. The solvent for both is normal salt solution, in order to make the anaesthetic solution as nearly isotonic with the body fluids as possible.

Care must be exercised in the use of the proper amount of adrenalin as the tissues may sometimes be rendered ischemic to the point of tissue death, with a resulting slough. The writer has had one such result in an elderly man with low tissue resistance. Adrenalin should be used in the very young, the old, the arterio-sclerotic and the diabetic, in reduced quantities. Its use in the pedicle of skin flaps is likely to cause the death of the flap. Too much adrenalin causes a dilation of the vessels following its constricting effect. When direct infiltration or circuminjection is used and in rectal work, special care must be exercised in careful haemostasis and obliteration of dead spaces. This is especially true in thick layers of fat and in the scrotum. No adrenalin should be used in venous anaesthesia. Also according to the work of Goetsch it is not advisable to use adrenalin in cases suffering from thyroid toxaemia.

Local anaesthesia may be produced through various procedures in injecting.

1. Nerve-block—this includes (a) spinal, (b) para-vertebral, (c) peri and endo neural, sacral and para-sacral injections, and (d) circuim injection.

2. Infiltration of the tissues in the operative field.

3. Venous.

4. Arterial (little used).

The writer in his work has had recourse to, peri and endo neural, circuminjection, infiltration and venous anaesthesia, almost exclusively, and it is to these methods that the remarks of this paper refer.

Venous anaesthesia may be used to block all the nerves in a cross section of a limb, and is applicable below the middle of the thigh and arm. To produce it, a section of the limb is rendered bloodless between two tourniquets, a vein dissected out and from 50 CC. to 150 CC. of ½% novocain solution injected into the vein under pressure. This blocks all the nerves passing through this segment of the limb in about 15 minutes.

To use local anaesthesia successfully, the operator must be familiar with the anatomy of the nerves in the region operated upon. Analgesia, not necessarily anaesthesia, must be accomplished. Pain must be avoided, yet the sensation of pulling or touch often cannot be avoided. But these sensations are seldom disagreeable.

The physic condition of the patient here plays considerable part and it is the custom of the writer in all operations of importance, under local, to administer to adults: Morphine gr.¼, Scopalomine gr. 1/150, one-half to one hour before operation. This

quiets their fears and many have been seen to sleep during the greater part of the operation. The operator must be careful to impart confidence to the patient throughout the operation, and must use a gentle and unhurried technic. Patients are allowed to smoke during the operation when circumstances permit. For all patients, someone sits by their head to engage them in conversation. This distraction is particularly necessary in dealing with children, for whom it is better to have some member of the family whenever possible. Comfort is of prime importance, therefore, the patient should be placed in as comfortable a position as possible, and a comfortable mattress provided to fit the operating table. Water may be given by mouth unless contraindicated.

Many tissues are practically insensative, but these are not supplied by the spinal nerves. The brain, lung and intestine are insensative, and also there is very limited sensation, if any, in the dura above the base of the skull, in the thyroid, liver, spleen, kidney cartilage and tendon. Fascia, certain areas in the muscles, parietal pleura, parietal peritoneum, capsular tissue, periosteum, bone marrow, perichondrium, tendon sheaths, synovial membranes, skin, subcutaneous tissue and mesentary, are sensative to pain in varying degrees.

The writer has now been using local anaesthesia for some six years, during which time, he has gradually widened its scope *with increasing experience*, until now practically fifty per cent of his work is being done under local. He does not hesitate to use a general anaesthetic of short duration, gas or ethyl chloride, at certain stages of certain operations, particularly those in the abdomen necessitating interference with the mesentery, and in exploratory laporatomy where extensive exploration is called for. The following is a partial list of operations done in this period:

1. Hernitomies (practically all).
2. Fistula in ano (practically all).
3. Perineorraphy ((complete and incomplete tears).
4. Hemorrhoids (practically all).
5. Cystotomy (practically all).
6. Circumcision (practically all, even children).
7. Exploratory laporatomy.
8. Appendectomy.
9. Intestinal resection.
10. Colostomy.
11. Ventral hernia.
12. Thoroctomy with and without rib resection.
13. Thyroidectomy.
14. Excision of inguinal and cervical glands.
15. Removal of osteomata.
16. Decompression.
17. Amputation below middle one-third arm.
18. Amputation below middle one-third thigh.
19. Teno-pasty.
20. Excision of carbuncles.
21. Excision of carbuncles, lipomata, keloids, sebaceous cysts, moles, benign tumors of the breast, etc.
22. Introduction of steinman pins through femur and os calcis.

This list is written to show the wide applicability of the method. It is not argued that it should be used in all cases under all circumstances, but local anesthesia has a very definite place in major, as well as in minor surgery, and the surgeon who ignores that fact is not doing the best for his patient in all instances. Several cases are recalled, in which anything but a local anaesthetic would have been extremely dangerous, yet those patients hardly showed the effects of the operation under local, and what is best for a patient in extremis should also be safest under usual operative conditions.

There are arguments both for and against local anaesthesia in general surgery. This much can certainly be said in its behalf. Its mortality list is low since cocain has been replaced by novocain. The post-operative dangers, pulmonary complication, organic degeneration and vomiting practically all are eliminated, there is practically no shock, danger of asphyxia is absent, there is no danger to the patient in having a tedious operation. Patients so operated are much less trouble to nurse, needing no special post-operative care such as is true of general anaesthesia cases for the first few hours after operation. On the other hand, the surgeon must at the same time be anaesthetist and surgeon, must be specially trained in his work, must be much more gentle and vary his technic to suit the occasion, and the co-operation of a conscious patient is often of material aid in the actual operative procedures. Occasionally, partial anaesthesia is induced necessitating a short inhalation of ethyl chloride or other general anaesthetic and it often takes a little more time which,for the nervous type of operator, is, in many instances quite distracting.

In any discussion of local anaesthesia, the remarks must necessarily be confined to

the type of those in this paper, unless describing the procedure in a given operation. To attempt to describe the procedure in all operations would require too much space for one paper. The writer refers you to the various volumes on this subject, several having been published since 1912, and the many articles which are continually appearing in the medical periodicals of England, France, Germany and America. To those interested he would advise that they read, first of all,, the book written by Braun, which is now translated into the English language.

Discussion: P. P. NESBIT, M. D., Muskogee, Okla.

First of all I want to express my appreciation of this paper, and the excellent work Dr. Fite is doing with local anaesthesia, for I am so situated that I know something about what he is doing along this line.

However, we cannot all see things in just the same way, so there are some things in his paper that I wish to call attention to. In addition to the dangers mentioned of sloughing and of hemorrhage following infiltration anaesthesia, and which are very real dangers, there is sometimes the difficulty of correct approximation of the tissues in closing, due to the hyperaemia of the tissues, or to incomplete relaxation due to incomplete anesthesia or to nervousness of the patient.

The writer states that he is now doing approximately 50% of his operative work with local anesthesia. This is a rather indefinite statement. If he is including all his minor operations, which we all do principally with local anesthesia, it will depend a great deal upon the amount of minor as compared with the amount of major surgery he is doing. However, if he means that he is doing anywhere near half his major operations with local, I believe that he is dangerously near having local anesthesia for a hobby. Mind you, I do not say that it is not possible to do half, or in fact nearly all, major operations with local, but the fact that it is possible does not by any means imply that this is the best method.

He also states that he does not hesitate to give a general anesthetic if it becomes necessary during the operation. In my opinion it is not advisable, unless there is some real contraindication to a general anesthetic, to start an operation with local unless we are reasonably sure that we can do all that is necessary without resorting to general anesthesia. For if you give the general anesthetic you have gained nothing by using the local, but have prolonged the operation, while if you do not give the general you either cause your patient unnecessary pain or do incomplete work, or probably both.

As to the use of local anesthesia for operations on children, so much depends on the disposition of the child and of the parent who accompanies them, and the control the parent has over the child, that it is difficult to estimate what percentage of them may be satisfactorily operated with local.

As to the classes of operations Dr. Fite mentions, in my opinion, local anesthesia is not the best in "practically all" hernia operations. In my experience many hernia present conditions that, in my opinion, are handled better under general anesthesia. Fistula in ano with extensive ramifying tracts; extensive perineal lacerations: and severe internal hemorrhoids are better operated with general anesthesia. Postoperative bleeding is especially liable to occur if infiltration anesthesia is used in these cases. In all intra-abdominal operations general anesthesia is to be preferred, unless contraindicated. In amputation of limbs Dr. Fite uses the venous method of local anesthesia, a method I have had no experience with so am not prepared to discuss.

INTESTINAL OBSTRUCTION.

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Enid, Oklahoma.

Intestinal obstruction is the manifestation of a great variety of pathologic process, the action of which produces a stasis of the fecal current. Speaking in general terms, the maintenance of the fecal current is dependent upon sufficient propulsive power of the intestinal muculature—peristalsis—and upon the integrity of the intestinal lumen. Suspension of the former produces what is termed—paralytic obstruction; occlusion of the latter, mechanical obstruction.

The paralytic form may be: (1) reflex, secondary to some exteraneous lesion, such as renal or biliary calculus, torsion of an ovarian cyst, early acute pan creatitis, or injury to the testicle; (2) due to some definite lesion of the intestinal musculature, as in peritonitis, rupture, thrombosis

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or embolism of the mesenteric vessels; (3) toxic, associated with uremia, pneumonia, and other forms of sepsis. On the other hand, obstruction may be due to an undue spasticity of the intestinal musculature.

Mechanical obstruction may be produced by lesions outside the intestine, as tumors, inflammatory adhesions, congenital bands, peritoneal pouches, and mesenteric slits. Or the obstructing medium may be with the intestine, as benign or malignant strictures and foreign bodies. The intestine may twist upon its own mesentery as an axis—vovulus, or one segment may be invaginated into another—intussusception.

In treatment of intestinal obstruction, whether acute or chronic, the surgeon must always be prepared for surprises, for there is probably no other department in the whole of surgery where the diagnosis of the underlying cause is so difficult to foretell. This is easily understood when one considers the manifold possibilities for mischief within the abdomen. Apart from purely intrinsic causes, the bowel may be impeded in its functions by many conditions of the intrinsic origin.

Progress in the treatment of acute intestinal obstruction has not kept pace with the progress made in treatment of other acute abdominal conditions; that the present mortality rate is high is due to delay in resorting to operation. This is probably due to uncertainty in diagnosis; first, because of the infrequency of the condition, and second, because the text-book descriptions of acute obstruction invariably picture a well advanced case and not the symptoms at onset.

In 75 per cent of cases of acute intestinal obstruction, the only symptoms present in the early stages are peristaltic pain, vomiting, and constipation. These three symptoms should at once arouse a suspicion of obstruction, and every effort made to decide the point without delay. The personal history may reveal previous peritonitis, poisoning by lead, or the tyrotoxicon of stale milk, or ice cream.

A careful examination of the usual hernial sites is then made to exclude strangulated hernia. But most important of all is to determine whether or not constipation is absolute by giving repeated enemata two or even three. Morphine should be withheld until a diagnosis has been reached and the condition and treatment explained to the patient.

Stercoraceous vomiting abdominal distension rapid, feeble pulse and symptoms of collapse belong to the late and not the early stage of intestinal obstruction, and a diagnosis to be of service to the patient must be made before the onset of these symptoms. The three symptoms, peristaltic pain, vomiting and absolute constipation, verified by the enema test, justify the diagnosis of obstruction.

The reflex type usually yields with the relief of the underlying cause. In those exceptional cases in which treatment is indicated, morphine and atropin are the drugs of greatest service. Hot applications in the form of poultices or turpentine stupes or, if these fail, cold by means of the Leiter coil, often prove beneficial. High glycerin oil, or turpentine enemas and cathartics are useful in stimulating peristalsis.

MECHANICAL OBSTRUCTIONS Blocking of the fecal current causes not only failure of elimination, but also rapidly increased production and absorption of highly toxic substances, which soon render their host a poor operative risk. Furthermore, as the result of delay in relieving the obstruction, the vascular supply of the intestine may be so impaired as to necessitate procedures which, even under the most favorable circumstances, are associated with a high mortality. Therefore, the keynote of successful treatment lies in early, accurate diagnosis, with immediate operation in the majority of cases. When the symptoms point toward obstruction but are insufficiently developed to permit a definite diagnosis, I consider it warrantable to make an exploratory incision, which of itself is practically devoid of danger and may be a life-saving measure.

The definite indications presented for surgical treatment are early removal of the obstructing medium, which in delayed cases may include excision of a gangrenous loop, and evacuation of the poisonous intestinal contents. With the exception of fecal impaction, mechanical obstruction is relieved only by surgical means. Internal medication is then used to hasten the elimination of toxic products and to maintain the function of vital organs, impaired through the action of these toxins. The use of morphine and its derivatives is to be strongly condemned. Cathartics are likewise contraindicated.

OPERATION: In the presence of vomiting, lavage is employed immediately, plenty of fluids should be given before and after the operation by proctoclysis or by hypo-

dramocylysis or by both prior to the operation. The incision is made over the site of obstruction when this can be definitely determined; otherwise the median hypogastric incision offers the best avenue for exploration. The fingers or if necessary the whole hand, should be introduced and a gentle, rapid and systematic search made to determine the location and cause of obstruction. Following up a distended or collapsed coil will often lead quickly to the seat of trouble. The ileocecal and umbilical regions, hernical, orifices, and pelvis are the most common sites of obstruction. If intra-abdominal search is futile, time will be saved by allowing the intestines to escape through the incision, which greatly facilitates further manipulations. During this evisceration, the intestines are carefully protected by hot, moist towels. Subsequent procedures depend upon the nature of the obstruction.

Tumors of adjacent organs require excision. Inflammation adhesions may be broken up with the fingers or by careful sponging, or may be so dense as to require cutting with knife or scissors. To avoid reformation the denuded areas must be carefully covered with peritoneum. Long bands are divided between ligatures placed close to the intestine, the intervening portion being excised. The anastomosis of segments proximal and distal to the seat of obstruction is required in those cases presenting dense, multiple adhesions, the separation of which would be impossible.

A Meckels' diverticulum demands excision. After freeing the blind extremity, the proximal end is divided a short distance from the intestine and the stump inverted by a continuous through and through linen suture. As an additional safeguard, I use a sero-musculature stitch of catgut. This inversion must not narrow the lumen of the intestine.

Obstruction in a hernia is dealt with according to the technic appropriate to the hernial orifice affected.

INTERNAL HERNIA: If difficulty is encountered in releasing the intestine the neck of the sac must be enlarged by careful stretching or incision at the point free from blood-vessels. Following reduction the neck of the sac is narrowed or obliterated by sutures.

MESENTRIC SLITS: Not infrequently the opening must be enlarged by stretching or incision at an avascular area before reduction can be accomplished. After releasing the intestine, the rent is closed with a continuous catgut suture.

INTUSSUSCEPTION: Reduction of the intussusception by hydrostatic pressure is to be condemned, because of its frequent failure and danger. The procedure may be used as a measure preliminary to operation in a very early case in which the invagination extends well along the transverse or the descending colon, thus producing a partial reduction before the abdomen is opened, and diminishing intra-abdominal manipulation with its attending shock. Reduction is accomplished not by pulling on the invaginated bowel, but by progressive upward compression of the intestine, distal to the tip of the invagination. Anomalies predisposing to recurrence must be corrected after releasing the invagination; a polypus, tumor, or diverticulum is excised; a long cecum or freely movable ascending colon is fixed to the parietal peritoneum. Intussusception of the small intestine may necessitate shortening of the mesentery by plication, which must be done cautiously to avoid injuring the blood-vessels. Should the intussusception be irreducible, the invaginated portion may be removed through a longitudinal incision in the intussuscipiens or in chronic cases in which gangrene is unlikely, the whole area may be excluded by a lateral anastomosis. On account of its high mortality, complete excision with end-to-end or lateral anastomosis is advisable only in exceptional cases.

VOLVULUS: The sigmoid flexure is the most common site of torsion, although any freely movable portion of the intestine may be affected. The condition is usually secondary to some abnormality such as an unduly long mesogimoid, adhesion, or tumor, which must be remedied by appropriate measures to avoid recurrence. A greatly distended loop requires evacuation by incision before uncoiling can be accomplished. The obstruction may be permanently overcome simply by untwisting the bowel; in other cases, however, the twist reforms immediately after reduction. It may be possible by fixation of the bowel to the abdominal wall or by shortening the mesentery to prevent recurrence; if such procedures are futile, excision is necessary.

In any of these forms of obstruction the vitality of intestine may be so impaired as the result of pressure or direct injury to the messenteric vessels that resection of the gangrenous loop with the end-to-end or lateral anastomosis is required. Such a re-

section should include normal intestine well beyond the area of gangrene.

STRICTURES: Excision of the stensored segment with end-to-end anastomosis is the ideal procedure in both benign and malignant strictures of the small intestine. In the absence of marked distension of the proximal segment, however, excision is dangerous, and must be supplanted by lateral anastomosis with subsequent excision at a second operation in case of malignancy.

Tuberculosis may produce single or multiple strictures in the small intestine, or may be localized chiefly to the ileocecal region, producing a tumor which is often difficult to distinguish from carcinoma. If the stricture is single, or if multiple strictures are closely approximated, resection of the whole stricture-bearing segment is advisable; if a considerable length of normal intestine separates the strictures each one should be treated separately. When the process is localized to the ileocecal region, the diseased area should be exercised and the ileum joined to the ascending colon by a lateral anastomosis. The condition of the patient or extensive tuberulous involument may prohibit excision, under which circumstance the obstruction is overcome by short-circuiting the fecal current, anastomosing loops proximal and distal to the site of the stenosis. Decided improvement in the patient's condition, which frequently follows this procedure, may permit a subsequent resection of the involved area.

Stenosis of the large intestine is due to carcinoma in the great majority of cases. If operable, an excision is performed, including intestine well beyond the growth, especially on its proximal side. Excision of the cecum is followed by an ileocolostomy excision of other portions of the colon may be necessary to permit the easy apposition of the two ends. Should the growth be operable an ileocolostomy or ileosigmoidostomy is required to carry the fecal current around the stenosed segment; inoperable obstruction of the rectum is relieved only by the formation of an artificial anus. Under no circumstances should excision with immediate anastomosis be undertaken when the obstruction is acute, since the intestine above has undergone such alterations as to make the procedure hazardous. The object of the primary operation is limited to the re-establishment of drainage, which is accomplished by an ileocolostomy or colostomy; after three or four weeks have elapsed, excision with anastomosis may be performed with comparative safety.

Chronic diverticulitis may lead to the formation of a mass indistinguishable microscopically from a malignant growth. The same general rules detailed for the treatment of operable carcinoma are applicable to this condition.

FECAL IMPACTION: A collection in the lower bowel which resists enemas must be broken up with the fingers and evacuated by an oil injection. A high rectal or sigmoidal impaction which injections fail to liberate requires instrumental separation through a proctoscope, with subsequent enemas to bring away the doughy mass. The administration of olive oil in the dose of two or three ounces four times a day, or saline cathartics and careful abdominal manipulations, may produce the evacuation of a collection in the transverse colon. Purges are dangerous. When, as the result of long standing, the fecal mass is hard and inspissated, ulceration with enterospasm or even partial encapsulation may ensue, under which circumstances other than surgical measures will fail. It may be that intra-abdominal manipulation will succeed in dislodging the accumulation so that it can be passed; should this fail, enterotomy must be performed. Exceptional cases present such extensive ulceration as to demand resection.

Gall-Stones and other foreign bodies are removed through an incision in the overlying intestine; if the body can be dislodged, the incision should be made in the dilated portion above to facilitate closure of the intestinal opening.

THROMBOSIS AND EMBOLISM OF MESENTERIC VESSELS: It is often impossible to locate definitely the line of demarcation between the affected and unaffected loops; or the process may be progressive, hence resection with anastomosis is unsafe. All that can be done at the primary operation is wide excision of the gangrenous, segment, with the formation of fecal fistula, both ends being sutured to the abdominal wound and drained. To anticipate further extension, the suspected area should be walled off with gauze. After a week or ten days has elapsed the fistula is closed at a second operation.

When the obstruction has existed for any length of time, the intestine above becomes loaded with highly toxic contents, which are evacuated by multiple incisions, or preferably, by the method advised by

Moynihan, which consists in carrying off the contents through a large glass tube inserted into the intestine from below upward. The glass tube is fitted with a long rubber tube which drains into a receptacle. As each segment is evacuated by a "milking process" it is threaded on the tube, the procedure being repeated until the canal is emptied. Following the removal of the tube, the incision in the intestine is closed transversely. When properly performed, no soiling occurs and drainage is unnecessary. It may be possible to avoid opening a distended sigmoid by passing a rectal tube. Following any operation on the large intestine, particularly the descending colon or sigmoid, dilation of the anal spincter and insertion of a rectal tube are advisable to facilitate the passage of gas and feces.

The formation of a fecal fistula above the site of constriction is permissible only when the desperate condition of the patient prohibits a more extensive procedure. Should the symptoms be indicative of strangulation, it would be folly to rest content with a fistula; while the obstruction is relieved, the gangrenous intestine quickly leads to peritonitis and death, a sequence which, obviously the fistula cannot influence. Through a small incision made under local anesthesia, low down in the inguinal region, a distended loop is picked up and carefully excluded from the abdominal cavity by suturing it to the parietal peritoneum. The intestine is then opened and drained by means of a glass or rubber tube, held in place by a purse-string suture. Later, when the patient's condition permits a second operation is usually necessary to remove the cause of obstruction and to close the enterostomy opening.

CONCLUSION.

Early diagnosis is the most important factor in the whole category. It is better that the operation should be done early than well. Better a poor operation done on a patient in good condition, than a good operation done on a patient in poor condition.

HEART CLINICS FOR SCHOOL CHILDREN.

The studies made by Harry B. Schmidt, Detroit, (Journal A. M. A., Sept. 16, 1922), of the heart clinics for school children in Detroit have demonstrated that progressive cardiac failure is usually due to an infectious process in the heart itself. This idea has been sufficient to indicate the importance of eradicating any foci of infection which may be present elsewhere in the body. Such a procedure may, in the future, prove to be the most efficacious measure we possess for preventing cardiac failure in school children.

SPLENIC ANEMIA (Banti's Disease), AND ALLIED DYSCRASIAS. SPLENECTOMY. CASE REPORTS.

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There are three conditions accompanied by splenomegally in which the surgeon is especially interested. They are splenic anemia, hemolytic jaundice and Gaucher's disease. Other conditions, such as pernicious anemia and von Jaksch's anemia, may be regarded as occupying an unstable position in the surgical mind at this time.

Nobody knows the cause of splenic anemia. With our present knowledge, clinicians use the name for convenience, but regard it as a syndrome rather than an entity. Many investigators are of the opinion that the cause of the syndrome is a toxin, and this appears to be the most tenable theory. The origin of the toxic agent is not clear. Three hypotheses have been set up:

1. That the toxic agent originates outside the splenic area, and when it reaches the spleen initiates the pathology.

2. That it is a splenotoxin *per se*.

3. That it is a splenotoxin, the production of which is brought about through the irritating effect of an outside toxin upon the splenic tissue.

One thing, however, seems clear, and that is that the spleen is at least the necessary medium through which the propagation of the syndrome takes place. The fact that in most cases the removal of the spleen is followed by cure is proof of this.

Whatever the agent, it initiates a hyperplasia, and as a result of this increased development of splenic tissues there is a very interesting phenomenon.

Through the relationship between the terminal arteries and the Malpighian bodies, the latter receive nutrition. With the normal pabulum thus coming to them, these bodies carry out their function of manufacturing lymphoid cells, this function, in the normal state, having its metes and bounds. But in the presence of hyperactivity associated with hyperplasia there is an over-abundant production of lymphocytes, which break away from their moorings and finally reach the splenic vein—hence the frequency of a high percentage of this kind of cell in the leukopenia usually associated with splenic anemia.

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Another interesting matter is the part played by the spleen in the production of anemia, not only in splenic anemia, but in hemolytic jaundice, and possibly in pernicious anemia, as well. It seems pretty clear that the red cells are destroyed in the spleen. They are engulfed by the cells of the spleen which are, with the exception of the purely supporting cells, "modified endothelial cells" (Moynihan), and have phagocytic powers and proclivities. Considered from such a viewpoint, the name of splenic anemia is not altogether inapt.

Now, in splenic anemia there is often—in fact, usually, bile in the urine, but jaundice is rare. Still, it is a step in the direction of jaundice, for both conditions—bile pigment in the urine and demonstrable jaundice—mean that an excess of coloring matter from the disintegration of red cells in the spleen has reached the liver, and the liver being unable to deal with it, the excess overflows into the blood stream. Essentially, this process is the same as that found in hemolytic jaundice, the difference being that in the latter the liver receives such an enormous amount of hemoglobin through the portal vein into which all the blood from the spleen flows, that it is totally inadequate for the task of handling it, and not only pigmented urine, but also jaundice results. When it is remembered that after splenectomy in the normal animal the amount of bile pigment formed is at first reduced approximately one-half, reflection upon the effect of the hyperactivity of the splenic phagocytes becomes more interesting.

Splenic anemia may occur in the young, but is much more frequent in the adult. Pretty constant features are splenomegally, distinct anemia—sometimes profound—and a marked leukopenia. The duration is usually a few years—occasionally many years. The following case is illustrative of a type in which the anemia is marked, but not profound, in which the duration is relatively short, and in which there was the unusual phenomenon of pain.

Case No. 1.
Hospital No. 11445.

Mrs. Pearl G., white, 35, entered the hospital September 27th, 1920, the chief complaints being weakness, loss of weight, left-sided abdominal pain and a large mass in the upper abdomen.

The patient emphasized the symptom of pain, which she described as being constant in the lower abdomen, more on the left side, and frequently radiating downwards and to the right. The taking of food made the pain worse, and caused it to be "cramping and pulling" in character. When the stomach was empty there were frequently gnawing and aching sensations about the abdomen.

According to the history, the patient had "cramping spells" two years before she came to the hospital. At first they would last three or four weeks, usually beginning in the left abdomen. There was no fever with the attacks. Generally after three or four weeks of pain there would be an interval of rest for three or four weeks. At first, the pain was not enhanced by eating, but she thinks the attacks were worse during the menstrual period.

Six months after the beginning of pain the patient noticed a small lump in the upper part of the left lower abdomen, and she had a heavy feeling in the abdomen. The "cramping spells" were closer together. The "lump" slowly grew. At the end of a year from the beginning of the "cramping spells" she described it as being about the size of an egg. About that time she observed that certain kinds of food, especially meat, gave her great distress—such distress that "nothing relieved it." Starchy food, such as potatoes, did not cause much trouble.

During the next six months there was a rapid increase in the size of the tumor, so that at one year after it was discovered there was a large mass in the abdomen, which she says was practically the same size as when she entered the hospital six months later. The pains then were much worse and constant, she describing them as being "pulling, cramping and drawing" in character. The taking of food gave her so much trouble that she ate very little.

A little over three months before the patient entered the hospital there was a cessation of menstruation. At that time she had pains in the back and legs. The appetite became poor. She lost weight and became much thinner and weaker, and she had much headache.

The past history is not of any considerable importance. She had a discharging ear four years before entrance, but it did not last long. She was confined normally eight years before. At that time there was a laceration of the perineum, which was not repaired. She had one abortion at four and one-half months about four years before entrance. There was no venereal history.

The family history was not significant.

The general appearance was that of a fairly well nourished, sick looking woman. The skin was described as soft, loose and muddy in color. The lips were dry and smooth. The teeth were clean and in good condition. The tonsils were slightly enlarged and inflamed. Examination of the head, neck, chest and chest organs was negative. The pulse rate was 80, blood pressure Systolic 90, Disatolic 60.

There was a large mass in the abdomen extending from about an inch below the ensiform to four inches above the pubis. Laterally, the mass extended from one midaxillary line to the other. The mass was hard, smooth, firm, painless and mobile from side to side. It seemed to be attached in the upper left abdominal region. It was a little more prominent to the right of the midline. There was an indistinct notch on what appeared to be the lower border. The mass moved up and down when the patient coughed. Over it there was no muscular rigidity or hyperesthesia.

The liver was not palpable, nor was there a palpable body in the normal location of the spleen.

One of the senior house officers made a vaginal examination and reported a negative finding except a lacerated cervix. A senior medical student on service at the time discovered a second mass in the lower abdomen, thought he could make out a uterine souffle, and gave it as his opinion that the woman was pregnant.

The patient was seen by the Obstetrical Division, which left the opinion that the woman was pregnant about 3½ months.

No malarial parasites were found. The Wassermann was negative. The red blood count was 3,570,000, white count 2,800, neutrophiles 63, small lymphs 30. Another count showed 3,800,000 reds, 45 neutrophiles, and 15 each of small and large lymphocytes. The white count was made a number of times, and ranged from 2,800 to 3,450. The hemoglobin percentage averaged 40. There was anisocytosis, poikilocytosis and polychromatophilia. The Medical Service in summing up the blood findings stated that the picture was that of a fairly severe secondary anemia.

The patient was investigated in the Medical Service, the final opinion being that she had splenic anemia. She was seen by a surgical consultant who concurred in the diagnosis, and splenectomy was advised, attention being called to the probable difficulty of the operation in connection with this type of disease.

In this case, the tumor occupied such a large area in the upper abdomen, and was so uniformly in the middle of the abdomen, there was at first great doubt as to the exact character of it. After a chemical meal, an x-ray examination was made, the Radiological Department reporting that the stomach was high, displaced to the left, irregular in outline, there being an inability to determine its shape. From the x-ray examination it was not possible to tell whether the x-ray picture was due to an anomaly of the stomach or to pressure from the outside.

A splenectomy was done on November 3rd, 1920. The spleen had a very long pedicle and was displaced markedly to the right. There was no great difficulty in connection with the operation, and the patient recovered without any particular trouble except some superficial breaking down of the abdominal wound.

The specimen weighed 1050 grams, and measured 15x18x7 cm. It was purple in color, smooth, firm and had two notches on the anterior border. The Pathological Department reported that there was a chronic fibrosis. The capsule was thickened, and there was hyperplasia of the reticular structure.

The day before operation there was a red count of only 2,240,000, and a white count of 5,500. This was the lowest red count and the highest white count that had been recorded. Twenty-one days after the operation—that is, on November 24th, 1920—there was a red count of 4,120,000 and a white count of 6,700.

The patient left the hospital in fair condition on December 3rd, 1920.

Through a friend of the patient it is learned that the pregnancy continued to term when she was delivered of a healthy baby in a normal manner. She recovered normally from the pregnancy and the last heard of her, about two months after the confinement, she was in good health.

Points of interest in this case are:

1. The rather unusual history of severe pain and cramping. This can probably be explained in connection with the great mobility of the tumor, the pain no doubt being due to twisting of the pedicle. The direct pressure of the tumor upon the stomach accounts for the additional distress after taking food.

2. It will be observed that there was a very low white count. In fact, there was an extreme leukopenia until the day before

operation, when the count showed a marked, but not extreme leukopenia.

3. Another point of interest is the low neutrophile count, which averaged around 45.

4. The presence of anisocytosis, poikilocytosis and polychromatophilia.

5. The rapid return of the blood picture to approximately normal within three weeks after the splenectomy.

The next case I shall report is illustrative of the rather unsual type that has a developmental period of many years. In such a case one is inclined to suspect that the syndrome described by Banti was preceded by a long period of splenic dysfunction of an unknown character. This case, too, will serve to show the efficacy of blood transfusion followed by splenectomy in a condition at first apparently hopeless.

Case No. 2.
Hospital No. 12220.

Mrs. Chas. W., white, housewife, American, 41, mother of nine children, the youngest being eight months of age, entered the hospital January 11th, 1921, the chief complaints being a mass in the upper left abdomen, great weakness, marked loss of weight, dyspnea, puffiness about the eyes and swelling of the feet.

The patient dated her illness from the summer of 1920, when she had some trouble on account of infected teeth and tonsils. Her health rapidly declined, and her weight dropped from 140 to around 100 lbs. She became weaker and weaker, and finally on November 25th, 1920, collapsed. She was unable to talk and was not able to help herself. It was very hard for her to breathe, and she was extremely nervous. There was only slight pain, and it was located in the left side of the upper abdomen. Following the collapse she had swelling of the feet, more pronounced dyspnea and puffing about the eyes.

The patient had not been entirely well for longer than twenty years. In 1897, during a pregnancy, she noticed a lump in the upper left abdomen. After confinement it disappeared, but was present again during the next pregnancy. This history was repeated until the last confinement in April, 1920. After that confinement the tumor did not disappear, but became larger.

There is nothing, aside from what has been said, of unusual interest in the past history.

The patient menstruated in July, 1920, after the baby was born in previous April, but had not menstruated since.

At the time she entered hospital, the record shows that she was emaciated, with sallow, yellowish, waxy skin and pale mucous membranes. There was a haemic murmur in precordium. There was a mass in the left hypochondriac and lumbar regions, hard, smooth, painless, with a notch on the anterior superior border. The liver was tender and palpable. There was no tremor, no ataxia. The pupils reacted to light and the reflexes were normal. The mind was clear and alert.

Analysis of the stomach contents after Ewald showed marked achlohydria.

The Wassermann was negative.

The urine showed the presence of bile.

Upon entrance to the hospital the pulse was 100, temperature 99.2. In the afternoon of the same day the temperature was 99.8, and the blood pressure Systolic 114, Diastolic 64.

The R. B. C. was 1,500.000, W. B. C. 2,-500, neutrophiles 35, small lymph 53, hem. 40 (Talquist). There was anisocytosis, poikilocytosis and polychromatophilia, and nucleated reds. The blood count was checked the next day, the report being:

R. B. C. 1,240,000, hem. 19 (Dare).

Two days later the report was R. B. C. 1,810,000.

The W. B. C. was made a number of times during the next two weeks, the count being from 2,000 to 2,500, and there was always a marked reduction in number of neutrophiles—on one occasion as low as 12, on another 15, but usually around 30 to 35. There was always a high small lymph count, from 53 to 69.

There was increased fragility of red cells.

The clotting time was 5½ minutes.

The proteopexic test was positive, the figures for white cells being:

Before meal. 2,250.
20 minutes, 1,300.
40 minutes, 2,000.
60 minutes, 1,400.
80 minutes, 1,400.

There was a marked shortening of coagulation time, the figures being:

5½—1¾—1¼—1¼—2.

The patient was entered in the Surgical Service, but, after a consultation, was transferred to the Medical Service, which rendered the opinion that she had pernicious anemia for the following reasons:

Weakness with but little pain, palor, low R. B. C., high lymph count, great loss of weight, profound anemia, low hemoglobin, enlarged liver, presence of tonsillar infection and achlohydria, and advised rest, extraction of teeth, full diet, massage of tonsils and transfusion.

On January 22nd, 1921, the first transfusion was done, 450 c. c. of citrated blood being employed. At that time the R. B. C. was 1,240,000. Two days later it was 1,810,000 and four days after transfusion it was 2,140,000. The patient felt better and was holding her own. After further investigation, it was decided, on account of the long history of enlarged spleen, the marked anemia, the very marked leupkopenia, the enlarged liver, that the patient had a splenic anemia, or Banti's disease, and she was sent back to surgery.

On February 15th there was a red count of 2,550,000. On February 18th, 700 c. c. of citrated blood was transfused into the veins. Two days later there was a red count of 3,080,000 and a white count of 2,500. She was so much improved that splenectomy was decided upon, and the operation was done February 22nd, 1921.

The operation was difficult, the pedicle being very short, and the spleen in close relation with the stomach and tail of the pancreas. The spleen was greatly enlarged, with enormously enlarged tortuous vessels. There was not much depression from the operation, she leaving the operating room with a pulse of 112 of "fair" quality. At 1:45 p. m. on the day of the operation the pulse rate was 76.

A blood count made on February 24th, two days after the operation, is extremely interesting. The red count had dropped to 2,500,000, but there was a white count of 12,900. It will be remembered that before the operation there was an extreme leukopenia. The neutrophile percentage was 74, while before the operation it had been as low as 12, and never above 35. The small lymph percentage was 16, while before the operation it was from 53 to 69. The patient slowly improved and was discharged a month after the operation. The last blood count of which I can find a record was on March 11th, when the R. B. C. had crept up to 2,960,000 and the white count on that date was 5,600.

On February 22nd, 1922, I had a voluntary communication from the patient, from which the following is an extract:

"Today is the 22nd, and one year since I was operated on, and as I cannot get down there I just thought that I would write you to let you know that I am in perfect health and weigh 150 lbs. My side has never given me the least bit of trouble. I am up and down the steps, never thinking of it at all. * * *I do not feel tired at all like I used to. I do all my work, and walk from one to three miles without getting out of breath."

I submit as points of interest in the case of this patient:

1. The extreme leukopenia.

2. The remarkably low neutrophile percentage.

3. The high percentage of lymphocytes.

4. The positive proteopexic test which, according to Widal, showed interference with the protein fixing function of the liver.

5. The rapid return of the relative number of different types of white cells quickly after the operation.

6. The long existence of what was apparently a prodromal splenomegaly covering practically the entire child bearing period without interference with the procreative function.

7. The very satisfactory result from a radical operation in the case of a patient almost *in extremis* when she entered the hospital.

8. The remarkable efficacy of transfusion of blood in the preparation of patients of this character for operation.

I regret exceedingly that I am not able to furnish a pathological report in this case, due to the inexcusable disappearance of the specimen before it was examined.

The subject of hemolytic jaundice has been referred to, and it may not be out of place to now briefly consider some of its salient features.

Clinically, there are two types—the acquired, or Hayem-Widal type, and the familial, or Chauffard-Minkowski type. The evidences of the former may appear at any age, but most frequently in childhood. In the latter the symptoms are present at birth.

Formerly, there was a rather fixed belief that these two types were distinct entities. Even after the remarkable efficacy of splenectomy had been demonstrated in the treatment of the so-called acquired type, there was no manifest disposition to apply the same means for the relief of the familial type.

At this time, due to the remarkably important investigations by Pearce and his associates, as well as many other workers in the field of research, it is pretty definite-

ly decided that there is no fundamental difference in the nature of the two types. As pointed out by Pearce, Krumbhaar and Frazier, "It is obvious that the familial type must at one time or another have originally been acquired," and I have wondered if its relatively benign course might not be explained by cell training and adaptation that begins co-incident with the beginning of embryonic life.

The cardinal symptoms are exactly the same in the two types—splenomegaly, nonobstructive jaundice, marked anemia, frequently paroxysmal, and, usually, fragility of the red cells. In both types, just as in Banti's syndrome, all agree that the dysfunction of the spleen is responsible for the continuation of the trouble, the red corpuscles perishing in that organ on account of the abnormal activity of its phagocytic cells. Other things being equal, then, the reasonable corallary from such a distinctly proved proposition would be the removal of the spleen regardless of the time at which the symptoms appeared.

Sometimes it is extremely difficult to make a distinction between the two types. I believe that the following case is an example:

Case No. 3.
Hospital No. 12221.

Velma J., age 8, entered hospital January 11th, 1921, complaining of jaundice, fever, weakness, and a mass in left upper abdomen.

According to the history, jaundice was first noticed at the age of three weeks, since which time it had been present, but for most of the time not marked. Usually once or twice a year, most often during the winter, she would have outbreaks, initiated in most instances in connection with a coryza. During these paroxysms she would have fever, and jaundice would be marked. She seemed tired and sleepy during the attacks. There was no itching of the skin. It was during one of these attacks that the patient entered hospital.

The mass in the left side had been noticed early in life, but it was impossible to secure a definite history as to the time of its appearance. When she was examined it extended downwards to the navel line, and to the right a little short of the midline. It was identified as being the spleen. It was smooth, rather firm, painless, and not very mobile.

The child was frail and much underweight. She had a little fever, seemed to be tired and rather listless, but did not appear to be profoundly ill. The skin and sclera were distinctly jaundiced.

The laboratory report showed R. B. C. 2,580,000, W. B. C. 6,300, neutrophiles 67, hemoglobin 60, anisocytosis, polychromatophilia, normoblasts, with fragility of R. B. C. at .375. The urine showed bile salts and pigment in large amounts. The proteopexic test was negative.

After due consideration, a diagnosis of hemolytic jaundice, probably of the familial type, was made, and a splenectomy was advised as soon as the patient had recovered from the exacerbation of her trouble, as the operation should never be done during a paroxysm. The Medical Division did not favor splenectomy on the ground that it was not applicable to the familial type. A week later the child was discharged "improved," as the paroxysm had subsided, and she went away from the hospital with the minds of the parents in a state of indecision. I have seen her casually once since then—the same frail, fragile little creature, woefully handicapped in the race of life and unconsciously facing a disheartening and forbidding future. When it has been so clearly demonstrated that there is "No operation in surgery giving such swift and striking results" (Moynihan), I keenly regret to see such a sufferer from hemolytic jaundice be denied the saving effects of a timely splenectomy.

To say that all patients presenting evidences of active pathology involving the spleen should be studied with the greatest care before deciding upon operation would be stating an axiomatic truth. The other day a physician sent me a patient for splenectomy with a diagnosis of Banti's disease. I will tell you about it.

Case No. 4.
Out-patient.

A boy 13½ years of age was brought for examination on account of a large mass in the abdomen, weakness, poor appetite and loss of weight. The enlargement had been noticed for only a little longer than a year, but the mother thought that the boy had not felt well for two years or longer. She remembered that long before the abdominal enlargement was noticed he would become tired quickly upon exertion, and did not manifest the activity and energy of a normal boy.

He lived in a malarial district in Southeastern Oklahoma, but had never had "chills" or other manifestations of malaria. However, on account of the enlarged spleen, the family physician had given him

quinine both intravenously and intramuscularly. This produced a dreadful urticaria and depression, but had no effect on the size of the spleen or the well-being of the patient. He was up and about, but quit school early last fall because he became tired so easily.

The boy was thin with a large abdomen. He was rather pale, but the color of the lips was fair. The superficial abdominal veins were prominent. The mass was identified as being the spleen. It extended across the mid-line, and from mid-epigastrium to below umbilicus. It was smooth, firm, painless. There was no fluid in the abdomen. The lower border of the liver could be felt on deep palpation. Liver dullness above was distinctly higher than normal.

I thought there was slight pigmentation of the face, neck and hands. The color was rather darker than from ordinary exposure to sun and weather. There was a distinct wedge-shaped, yellowish opacity of the conjunctiva on both sides of the cornea in both eyes. Up to that point, it looked like the endotheliomatous process usually called Gaucher's disease. The three conditions in which a mammoth splenomegaly is most often present are Gaucher's disease, leukemia and malaria, and I was inclined to Gaucher's disease. The boy was sent to the laboratory, and the report came back that he had 465,000 leukocytes, with myelocytes in abundance. The red count was 3,180,000. hemoglobin 54. It was then perfectly clear that he had an advanced myelogenous leukemia, and that an operation should not be undertaken.

AGAIN THE POOR BOY AND MEDICAL EDUCATION.

Long before the campaign began for the improvement of medical education, appeals were frequently being made for "the poor boy who wants to get a medical education," and, as the higher entrance standards began rapidly to be adopted by medical schools, appeals of this kind were repeatedy commented on by The Journal. The situation for the poor boy today is better, if anything, than it was twenty years ago. It is true that medical colleges have increased their requirements for admission from a high school education to two years of college work. The two years of college work, however, are no hindrance to the poor student; there are many colleges which provide abundant opportunities whereby students of limited means may work for all or part of their expenses. More time, indeed, is required, but these two years are well spent by the student in securing a better preparation for his medical studies. It is true, also, that the cost of conducting a medical school has been greatly increased during the last twenty years; but during the same time, the fees paid by medical students have been only moderately advanced and cover only a small portion of the cost. Even the slightly increased fees, however, are more than offset by the establishment of free scholarships and generous loan funds in the better grade medical schools. The opportunities for the student of limited means to secure a medical education have in no way been diminished. As a matter of fact, the anxiety which is still being expressed for the boy who is poor in purse but not in intelligence is not warranted by the facts. Investigation discloses that many students of limited means are found in all of our high-grade medical schools, in which these students are enabled in various ways to work their way through. Meanwhile, it is the student of limited means who, as a rule, best appreciates the value of both time and money. He is not enticed by the pretentious statements of low-grade medical colleges, but usually selects the better institution. It is quite evident, therefore, that the improved standards of medical education are not hindering the student who is poor in purse from obtaining a medical education.

NEW BOOKS.

OBSTETRICS FOR NURSES.
The New (6th) Edition)

Obstetrics for Nurses, by Joseph B. DeLee, M. D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. New (6th) Edition, entirely reset. 12mo of 525 pages, with 245 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth $3.00 net.

Newness—The new sixth edition, published July, 1922, has been thoroughly revised and reset. It includes every recent development of proved value.

Two Points of View—For many years a lecturer to nurses and a recognized authority on applied obstetrics, Dr. DeLee is admirably fitted for writing a nursing text. He not only details the duties of the nurse, but correlates her work with that of the attending physician.

Illustrations—The 245 illustrations and four color plates act as the visual interpretation of the text—each illustrates clearly, forcefully, some one important point.

Presentation—The "human side" of obstetric nursing is emphasized—the mental as well as the physical well-being of the patient is considered.

Glossary—A glossary of important terms is given. Numbers after the definitions refer to the pages of the text where the word is used.

NEW AND NON-OFFICIAL REMEDIES.

During August the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies

G. W. Carnrick Co.: Corpus Luteum—G. W. C. Co.

Gradwohl Laboratories: Sterile Solution of Mercury Oxycyanide—Gradwohl.

Lederle Antitoxin Laboratories: Pollen Antigens-Lederle, Solution Epinephrine-Lederle.

New York Intravenous Laboratory: Loeser's Intravenous Solution of Mercury Oxycyanide.

Parke, Davis and Co.: Antipneumococcic Serum (Palyvalent).

Winthrop Chemical Co.: Luminal Sodium Tablets, 1 ½ grains.

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Reprints of original articles will be supplied at actual cost, provided request for them is attached to manuscript or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive the Journal should call for immediate notification of the editor, 508 Barnes Building, Muskogee, Okla.

Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

EDITORIAL

CLIMATE AND TUBERCULOSIS.

In spite of the oft-reiterated statements of leading authorities that climate plays little part in the treatment of tuberculosis as compared with hygienic measures, it is rather amazing to what extent the contrary belief has taken hold, not only on the laity, but also on the profession. As a rule, when the diagnosis of tuberclosis is made, the patient, or some friend of the patient's will ask some such question as, "What climate do you think best for consumption, Doctor?", and often follows the statement that, while the resources of the head of the house are limited, he is ready to sacrifice all he has and move to this state or that state, if such procedure will afford the chance of a cure. And all too often, if the reports of patients are to be credited, the medical consultant will admit that such a course is highly desirable, and urge that time is precious and that none be lost in speeding the patient to the land of healing. As to how the financing of the proper feeding, housing and nursing is to be done is a question to which scant attention is likely to be given. The consequence of this short-sightedness is a familiar and pitiful sight of all well advertised resorts for consumptives.

The real importance of the fetish of climate may be judged from the location of the most famous resorts. Saranc Lake, the first and best known of the sanatoria for tuberculosis is in the Adirondacks; Monrovia in southern California; Asheville is in the highlands of North Carolina, while Colorado, Arizona, New Mexico and Texas contain numerous and well patronized institutions of this type. Most of the other states boast one or more sanitoria which enjoy well deserved popularity. It is stated that the proportions of cures in these several localities of most divergent range as to moisture, altitude, temperature and weather changes, show no very striking divergence. Also it is true that the patronage of the individual institution is largely decided by geographical contiguity.

While bearing in mind that in the exceptional case climate may be the deciding factor for weal or woe, it is well to acquaint the average patient with the truth that the outcome of his illness is likely to depend on other factors. We can tell him that the best chance for recovery, as well as for the important education in self-care, is best secured at a well regulated sanatorium, chosen for accessibility or such other reasons as may seem best fitted to the case in hand; that, if such expense be beyond his means, his next best chance is to avail himself of home treatment in such locality as may be most convenient.

Let us by all means discourage the aimless pilgrimages in search of the golden clime, when the main need of the patient is to rest and not to roam.

BENJAMIN H. BROWN.

YOUR TUBERCULOSIS PATIENTS.

The Attorney General of the State of Oklahoma has rendered recently a decision concerning the admission of patients affected with tuberculosis to the state tuberculosis sanitarium and the State Health Commissioner is very insistent that all physicians comply with the law in reporting cases. In order that all may be prop-

erly informed a portion of the letter of the State Commissioner of Health is quoted:

"First: All contagious and infectious diseases are reportable by law. Tuberculosis falls within this class of cases.

"Second: The Attorney General, with regard to admittance of patients to the tuberculosis sanitariums, has ruled as follows:

"1. That every citizen of the state afflicted with tuberculosis must be admitted to these Sanatoria upon application.

"2. That in case of failure of a county to make provisions for defraying the expense of transportation and treatment of patients in these Sanatoria, as provided by law, the state can proceed against the Poor and Insane Fund of such county and enforce collection.

"3. That an authorization from County Commissioners is not required for the admittance of patients to the State Tuberculosis Sanatoria.

"When a physician reports a case of tuberculosis he performs a three-fold duty.

"First, his duty as a citizen by complying with the laws of his state.

Second, his duty to humanity by putting the State Board of Health in touch with tuberculars to the end that they may have the proper care and treatment.

"Third, his duty to protect his fellowman against a dangerous disease. Every patient admitted to these Tuberculosis Sanatoria relieves his family and the community of a menace to health."

TAKING A HUMAN INVENTORY.

Once a year, or oftener, the up-to-date business man takes a complete inventory of his stock and is thus able to know what is the exact condition of his business. Such an inventory shows what sections or departments are yielding good returns and what departments need special attention in order to put them on a paying basis.

If a yearly inventory is so important in business, how much more important is it that we should take a yearly inventory or examination of the various parts of our bodies to see if they are working properly?

Oftentimes, in business, a poorly paying line or one actually losing money can be changed so that it becomes the most successful once the inventory has shown the necessity of concentrating attention on this particular department. In the same way, a part of the body not working properly can in many cases be brought back to complete health, provided faulty habits and wrong methods of living are corrected.

The only way of finding out what condition a person is really in is to have a complete medical examination. By this is not meant just a hasty examination of the heart, and lungs with a stethoscope. It means a systematic medical survey of the individual, including both mental and physical aspects, and taking into consideration his living and working conditions, habits, recreation, income, personal and family history, etc. Various special tests are required, including among others examinations of the blood and secretions, a test of the eyesight and hearing, an x-ray of the chest, and an examination of the nose and throat.

Some people are afraid of having a physical examination made for fear of finding out that there is something wrong with them. This attitude is as foolish as fearing to ask, when motoring, if you are on the wrong road; for in both cases the further you go without correction the worse off you are. Both in the matter of health and traveling, first find out if you have made any errors and thereafter, keep to the right road. Health like the highroad is abundantly marked with sign-posts if you are traveling too swiftly and will take pains to slow up and read them.

Once a year, at least, go to a competent physician and have a complete physical examination made. If there is nothing the matter with you, there is no greater satisfaction than knowing this fact. If, on the other hand, some part of the body is out of repair, learn what it is and what to do to build it up or keep it from growing worse. The human body is the only machine for which there are no spare parts. Learn to use rightly those you have.

THE GORGAS MEMORIAL FUND.

At the St. Louis Annual Session the Board of Trustees reported to the House of Delegates that in response to a request received from the directors of the Gorgas Memorial Institute of Tropical and Preventive Medicine for the co-operation of the American Medical Association, the Board had taken action which resulted in the appointment of a committee, representing the American Medical Association, to

act on the project. The following were appointed: Dr. George E. de Schweinitz, Philadelphia; Dr. Charles W. Richardson, Washington, D. C., and Dr. Fred B. Lund, Boston.

The House of Delegates unqualifiedly endorsed the Gorgas Memorial as a tribute to a past President of the organization and one of its most distinguished and loved members. At its recent meeting the Executive Committee of the Board of Trustees received the following statement from the committee and directed its publication:

STATEMENT AND APPEAL FOR CO-OPERATION.

As a result of the stimulating suggestion of President Porras of Panama, it has been resolved that a fitting memorial shall mark the humanitarian service of the late Major General William C. Gorgas, and the beneficent influence of his life and work on mankind throughout the world. Following the thought of President Porras, it has further been decided that this memorial shall take the form of a scientific institute for the study of tropical diseases and of preventive medicine.

No better place could have been selected than Panama City, the gateway between the Atlantic and the Pacific, where General Gorgas' well-planned and executed work made possible the building of the Panama Canal.

It is hardly necessary to call the attention of the medical profession to the far-reaching effects of General Gorgas' work on the welfare of the people of the whole world, especially in tropical and semi-tropical climates, and in all places subject to the inroads of infectious disease.

We of the medical profession remember him as our Surgeon General during the early part of the World War. We remember his prompt recognition of the necessity of bringing into active service large numbers of physicians and surgeons from civilian life. We remember his genial and kindly nature, his high character, and his steadfast effort directed toward the organization and equipment of the Medical Corps of the Army. We remember the patriotic response. We remember him as a great sanitary officer, to whom we wish to pay a lasting tribute.

A central committee has been formed, with Admiral Braisted, retired, ex-President of the American Medical Association, as its president. The American Medical Association has appointed a committee of three to work in accord with the central committee, and through its members this appeal is made to the American medical profession.

The plan is to build at Panama an institute for the study of tropical and infectious diseases, with a hospital, laboratories, departments for research and all other facilities required in an institute of this character, erected and administered according to the most progressive, modern ideals. The Panamanian government, owing to the far-sighted, philanthropic vision of President Porras, has donated the great Santo Tomas Hospital, and also the ground on which it is proposed immediately to construct the buildings as they have been described. Dr. Strong has been appointed the scientific director.

In conjunction with this work in Panama, there will be established in Tuscaloosa, Ala., the Gorgas School of Sanitation for the purpose of training country health workers, sanitary engineers and public nurses, especially educated to deal with the problems peculiar to the Southern states.

An endowment of six and one-half million dollars will be required to enable the institute to carry on the work according to the plans which have been formed

The Republic of Panama has demonstrated its sympathetic and practical interest in this enterprise with splendid liberality. The physicians of our country, and especially the members of the American Medical Association, surely will not disregard the memory of a former President, and will seize the opportunity to make in this respect a contribution of which they will be proud.

The campaign for funds is to be international. A large response is expected from North, Central and South America, since the nations of these countries have been the chief beneficiaries of the labors of General Gorgas. It is fitting that his co-workers of the American medical profession should be requested to respond generously to this appeal. It is hoped that every member of the American Medical Association will make as liberal a subscription as possible. Any sum will be gratefully received. Checks should be drawn to the order of the "Gorgas Fund" and should be mailed to the American Medical Association, 535 North Dearborn Street, Chicago.

Editorial Notes—Personal and General

Dr. B. J. Duckett, Fairmont, has moved to Crescent.

Dr. S. S. Haberly, Wapanuka, will in the near future move to Cordell.

Dr. C. H. Anthony, Oklahoma City, has motored to St. Louis, Mo., for a fortnight.

Dr. W. E. Dixon, Oklahoma City, spent his vacation in his cottage at Estes Park, Colorado.

Dr. A. S. Risser and family, Blackwell, spent the larger part of July and August at Hollister, Mo.

Dr. B. F. Nihart, Oklahoma City, has returned from Los Angeles, California, where he has spent the summer.

Dr. C. A. Arnold, Tulsa, left the middle of August to motor to Eldorado, Colorado, for a few weeks stay.

Dr. Lea A. Riley, Oklahoma City, has returned from Colorado Springs, Colo., where he has been spending the summer.

Dr Edward F. Davis, Oklahoma City, is spending his vacation at Torrey Lake, Wyoming. He will return in three weeks.

Dr. J. A. Ross, Oklahoma City, has returned to Oklahoma after motoring to Los Angeles, Cal., and other western points.

Drumright, Oklahoma, is to have a new Hospital under the ownership of the Drumright Hospital Association of which Dr. Paul Sanger is president; Dr. C. L. Kahle, vice president; Dr. C. D. Blachley, secretary, and Dr. O. W. Starr, treasurer. Since the death of Dr. J. C. Stevens the Drumright Emergency Hospital has been closed and the new hospital which will be located in the Kasem Building will take its place.

DEATHS

Dr. J. C. Stevens, Drumright, Oklahoma, died August 4, 1922, age 57, from acute indigestion.

Dr. A. S. Crocker, Oklahoma City, Oklahoma, died of wound from accidental discharge of his own revolver, July 15, 1922, age 55. Graduate University of Louisville, Class of '90.

Dr. Lee Ben Clark, Atlanta, Ga., 54 years old, prominent in medical circles throughout the world through his writings on medical research, died at his home in Atlanta. August 24th, as the result of five weeks illness, which followed a stroke of apoplexy.

Dr. Crawford Lester Hall, Kansas City, Mo., whose death was chronicled in July, so worthily, efficiently and gracefully held his position on the stage of a long and useful life. Born in 1845, one feels the only explanation for his longevity, lies in his clean manner of living in every possible physical aspect, but, what is more, was his wonderful personality and his ingrained characteristic of omitting nothing, in his daily relations with men. The prime of all of them was his fine regard for the rights of the other fellow, and his never forgetting the little niceties and courtesies, commonly denominated "Southern." As one would expect the man of so many clean attributes, kept all things about him in the same state of immaculate good taste. His departure will bring regret to many Oklahoman's who knew him when in their student days, as also the realization that his is a place not to be filled, they seem to have quit making men like that, so, this man who was replica of the finest social, ethical, and professional characteristics composes himself for the final and never ending rest, leaving behind an example not to be equalled. It is not flattery or inapplicable to say that it is more than unfortunate that every young medical student could not have had the extreme good fortune to associate with, and acquire some, of the ideals of the man. Certainly such association would always recall itself to the man as of a fineness peculiarly its own. If Dr. Hall had a real enemy among men, knowledge that he had one would come first as a surprise, then as conviction that his enemy was to be held in blame for no other hypothesis seems possible of acceptance.

As to his station in the medical profession, it is said that during his years of service, he had been honored with scores of places of honor, confidence and respect. For information of those who knew him not, the writer believes that it would be unanimously agreed by those cal'ing him friend, that he was probably the handsomest physician in the United States. An idea may be had as to that by saying of him, that he was a son of the Old South. Such physical attributes, more often handicap than otherwise, were not so with Dr. Hall. In social contact with others his execution of the amenities was a source of delight to all. His regard for others was perhaps too much, rather it was too finely applied considering where he was casting his pearls. Once, arriving 12 hours late for a convention at San Antonio, our hotel reservations were not prepared by reason of an overhanging series of races, but Dr. Hall and I might have a double room with two beds, would that be satisfactory? We voted without dissenting voice that it would, but he was advised that I "snored sometimes"—that was all right—fatigue of the trip brought sleep at once and until I was suddenly awakened, Dr. Hall standing over me, dressed to the minutest detail, saying "Thompson, Thompson, that snoring, will you please turn over on your side"—I turned. Next day the little episode had become the talk of all San Antonio, that is medically, for it was known that rather than awaken me, when I was giving him outrageous treatment, he had gone down and appealed to the clerk to give him another bed anywhere. Not many of us would be so considerate, likely a chair would have been gently hefted through the air to the snorer's location with grace and an amount of profanity eloquently expressive of the real feelings in the case.

We believe that if man is due reward hereafter, that man is Dr. Hall, for men of that type live as sacrifices and objects of imposition from others. We know that many a beneficiary of his ability and unusual refinements will give him a tear of sincere regard for the man's sake alone.

COMMITTEE ON TOXIC EFFECTS OF LOCAL ANESTHETICS.

A Committee for the Study of Toxic Effects of Local Anesthetics has been appointed to act under the Therapeutic Research Committee of the Council on Pharmacy and Chemistry. The personnel of the committee is as follows, the several members representing the sections of the Scientific Assembly as indicated: Emil Mayer, chairman, New York (Laryngology); Elliott C. Cutler, Boston (Surgery); Henry S. Dunning, New York (Stomatology); Robert S. Lamb, Washington, D. C. (Ophthalmology); David I. Macht, Baltime (Medicine); Charles Norris, New York (Pathology); Alexander Randall, Philadelphia (Urology), and Robert A. Hatcher, secretary, New York (Pharmacology).

The purpose of the investigation which it is proposed shall be conducted is to assist in increasing the safety, value and importance of local anesthesia. All information received by the committee will be considered strictly confidential. The committee will appreciate the co-operation of physicians. This co-operation can most practically be given by furnishing the following information to the chairman or to one of the committee:

1. Have you, during 1920 or 1921, observed any toxic effects—fatal or not—following the use of cocain or any of the other local anesthetics?

2. If you have observed such toxic effects please submit a detailed report of each case; record, among other facts, data concerning the patient's general condition, the occasion for using the local anesthetic, the drug employed, the method of administration and the dose administered.

3. Kindly inform the committee of the name and address of any physician whom you know to have had any accident with any one of the local anesthetics.

PROGRESS IN PREVENTIVE MEDICINE.

The prevention of disease, President Vincent declares, is steadily tending to become the goal of the medical profession, although there has been and still is a tendency on the part of the average physician to look through the microscope of cure rather than through the telescope of prevention. The leaders of the medical profession have not generally taken the myopic view. They have on the contrary been the very prophets of preventive medicine, and they are increasingly regarding experience with individuals as a mean of protecting the community against it. The application, by men of imagination and organizing ability, of the scientific knowledge of the origin, spread, and prevention of disease has been a boon to mankind.

"But it is too early to feel complacent. Only a beginning has been made. Many diseases still baffle the health authorities. Whole regions have been almost untouched. Even the most advanced communities fall far short of what might be attained. The average individual remains relatively ignorant and negligent of sanitary science and of personal hygiene. Almost all physicians are still too exclusively concerned with the individual aspect of disease.

"Stages in the progress of preventive medicine are distinguishable. First comes control of the physical environment through pure water, milk, and food supplies, adequate sewerage and refuse disposal systems, improved housing, heating, and other than those whose causes are water and ventilation. Then follows control of diseases food borne. Various forms of occupational hazards and maladies are also attacked. Concern for the welfare of mother and child is a prominent feature at this stage. The third stage emphasizes the vital part which personal hygiene plays. It is roughly estimated that 80 per cent of the maladies which produce the total death rate cannot be directly controlled by the sanitarian. He must persuade individuals to conform to the laws of health and to report promptly the first sign that anything is amiss.

"A fourth phase just beginning to emerge has to do with economic, social, and mental influences. Income, standard of living, opportunities for social intercourse and recreation, all have important relations to individual and community health. Mental hygiene, which is coming to be recognized as a part of public health, deals with problems of defects and delinquency in children and criminality in adults, with nervous and mental disorders, with the classification, treatment, and custodial care of the feeble-minded and insane, and related questions. To the support of the work of the National Committee for Mental Hygiene the Rockefeller Foundation contributed during 1921, $86,370.57."

TECHNIC OF PROSTATECTOMY AND ITS RELATION TO MORTALITY.

Hugh Hampton Young, Baltimore (Journal A. M. A., April 1, 1922), reviews the changes that have come about in the evolution of his operation of perineal prostatectomy, first performed by him in 1897. Among the cases in which the technic now in use was employed, 166 consecutive perineal prostatectomies, the mortality was nil. Among these patients there were four more than 80 years of age, and forty-nine more than 70, and about 30 per cent had kidneys so badly impaired as to require several weeks of preliminary catheter drainage and treatment with large amounts of water to restore the renal function sufficiently before operation could be safely undertaken. In only two cases was it necessary to supply suprapubic drainage in the preparatory treatment. All other cases were handled by either intermittent or continuous catheter drainage, great care being taken to avoid urethral suppuration. Young stresses the fact that by means of the perineal route, just as radical and satisfactory removal of the entire adnomatous prostate in one piece can be accomplished as by the suprapubic route, with, however, complete conservation of important anatomic structures (vesical sphincter, ejaculatory ducts, etc.). By means of the great natural advantages of the lower operation—ability to perform an open operation through visual inspection, to arrest hemorrhage and to apply sufficient packing for complete hemostasis, and with dependent drainage, an avoidance of sepsis, and the inconvenience of distention of the bowels which so frequently follows suprapubic operation—a remarkably low mortality can be secured and prostatectomy brought within the ranks of those modern major surgical procedures which are practically free from danger.

THE ROLE OF THE NURSE IN CURE AND PREVENTION.

"The modern hospital and doctors and surgeons are largely dependent upon the trained woman nurse, who has made an invaluable contribution to curative medicine. Public health administrators are recognizing the visiting or health nurse as equally indispensable to the success of public and personal hygiene. Already maternity and child welfare nurses, school nurses, tuberculosis nurses, and several other specialized types have taken their places in private health systems and in government departments. One state has announced as its goal the appointment of a health nurse for every 2,000 of the population; another has fixed the ratio at 1 to 3,000.

"Questions as to the exact function of the bedside nurse, the kind and length of training she should receive have been under discussion for some time. The advent of the health nurse raises similar problems. How far should her education coincide with that of the hospital nurse? In what should consist her special training? How much time should the entire course occupy? Should there be different grades of both bed-side and health nurses? Is there a place and function for a lay worker or a health-visitor? In 1919 the Foundation invited a group of persons who are most familiar with nursing problems to a conference which nominated a survey committee under whose auspices a competent expert has been making a study of the subject in all its phases. A report is promised in the summer of 1922. The expenses of the survey have been met by the Foundation.

"During 1921 the International Health Board contributed toward short courses for New York State nurse training. Four nurse training centers in France were aided not only to train visiteuses d'hygiene but to improve in certain hospitals standards of ward nursing and administration. The Cavell-Depage Memorial School of Nursing in Brussels will be an integral part of the reorganized hospital and medical school to which the Foundation is contributing a large sum. The International Health Board is co-operating with the new government hospital in Rio de Janiero in establishing good standards of nursing under the leadership of American trained nurses. The Foundation supports a nurse training school in connection with the Peking Union Medical College. A survey of nurse training in Great Britain and on the Continent, to be begun early in 1922, has been authorized."

SEQUELS OF ACUTE EPIDEMIC ENCEPHALITIS.

Morris Grossman, New York (Journal A. M. A., April 1, 1922), reports the results of his study of ninety-two cases of acute epidemic encephalitis from one to three years after recovery. Only ten of the ninety-two patients examined in this series were free from symptoms and showed no residual signs. Fourteen others had recovered sufficiently to allow them to return to their work. These patients, however, still showed residual signs of their previous illness, and complained of various forms of psychic disturbance, such as insomnia, irritability, poor memory and fear neuroses. Two patients showed no change in their physical condition since their last examination one year before. Four patients showed slight improvement in their symptoms and physical signs, but were still far from being well. The remaining sixty-two patients showed a serious, more or less progressive involvement of the central nervous system which was evidenced by disturbances in the motor, psychic or autonomic functions. Of these sixty-two patients, forty-two showed a clinical syndrome which closely resembled that seen in paralysis agitans. However, their emotional responses were more active than those of the average patient with paralysis agitans. They were restless and irritable. This mental state formed a striking contrast to the resignation usually found in many of the patients suffering from true paralysis agitans in the later stages. Barring an occasional case of disseminated sclerosis or of diffuse cerebral arterial sclerosis, encephalitis seems to be the one disease that shows most frequently lesions involving the basal ganglions and the pyramidal tracts. It is emphasized that myasthenia gravis, disseminated sclerosis, Huntington's chorea and dystonia musculorum deformans may be simulated by epidemic encephalitis. The present state of knowledge does not warrant establishing any definite etiologic relationship between epidemic encephalitis and paralysis agitans, multiple sclerosis, and the various other clinical types that follow encephalitis. Another outstanding feature that was noted in the re-examination of these patients was the strikingly large number that showed increase in the activity of the abdominal reflexes. This was found to be the case in seven of the eight patients who showed definite evidence of involvement of the pyramidal tracts.

TEAM WORK FOR WORLD HEALTH.

"The outlines of a world-wide campaign for health are beginning to emerge. Scientific research workers in many national centers are in constant communication. Knowledge is being applied more effectively to the problems in the field. Governments are sending attaches of hygiene into each other's territories. Total statistics on an international scale are being reported more acurately. Prompt notification of epidemics is being facilitated. Outposts against plague and other diseases are being stationed and supported. Leaders and technical experts are in training in larger numbers and under more favorable conditions. Fundamental medical education is becoming more thorough and more cosmopolitan. Popular knowledge about preventive medicine and personal hygiene is increasing. Intercommunications of many kinds are being improved and multiplied. All these things are fostered by many methods and agencies such as working agreements between governments, the Health Committee of the League of Nations, and the League of Red Cross Societies. It is the purpose of the Rockefeller Foundation and its Boards to have a part in this world-wide team-work for preventing disease and bringing about improved conditions of health, and thus 'to promote the well-being of mankind throughout the world'."